

WHAT IS CLAIMED IS:

1. A method of assembling a compressor, said method comprising:
  - providing a motor having a stator and a rotor;
  - operably coupling a shaft with said rotor;
  - aligning a first bearing support member with said stator by registering at least one first alignment guide with at least one of said first bearing support member and said stator,
  - securing said aligned first bearing support member with said stator wherein said first bearing support member rotatably supports said shaft proximate a first end of said motor;
  - aligning a second bearing support member with said stator by registering at least one second alignment guide with at least one of said second bearing support member and said stator;
  - securing said aligned second bearing support member with said stator wherein said second bearing support member rotatably supports said shaft proximate a second end of said motor opposite said first end;
  - operably engaging a compressor mechanism to said shaft;
  - securing said operably engaged compressor mechanism relative to said motor, said shaft and said first and second bearing support members wherein said motor, said shaft, said first and second bearing support members and said compressor mechanism form a compressor subassembly;
  - inserting said compressor subassembly into a housing; and
  - hermetically sealing said housing after inserting said compressor subassembly therein.
2. The method of claim 1 wherein said first and second alignment guides comprise substantially cylindrical-shaped members and wherein said steps of aligning said first and second bearing support members with said stator includes registering said first alignment guides with openings located on both said stator and said first bearing support member and registering each of said second alignment guides with openings located on both said stator and said second bearing support member.
3. The method of claim 2 wherein said first and second alignment guides define passageways extending through said cylindrical-shaped members and said steps of securing said aligned first and second bearing support members with said stator includes inserting a fastener through said passageways defined by said first and second alignment guides.
4. The method of claim 1 wherein said compressor mechanism includes an

orbiting scroll member and a fixed scroll member and wherein said second bearing support includes a thrust surface; said orbiting scroll member operably coupled with said shaft and positioned between said fixed scroll member and said thrust surface.

5. The method of claim 4 wherein said step of securing said compressor mechanism includes securing said fixed scroll to said second bearing support member.

6. The method of claim 1 wherein said step of inserting said compressor subassembly into said housing comprises thermally expanding said housing, inserting said compressor subassembly into said thermally expanded housing and securing said compressor subassembly within said housing by allowing said housing to contract and securely engage said compressor subassembly.

7. The method of claim 6 wherein said housing securely engages outwardly facing surfaces on said first and second bearing support members on said compressor subassembly.

8. The method of claim 1 wherein said first and second alignment guides define passageways extending therethrough and the steps of securing said first and second bearing support members to said stator comprises inserting fasteners through said passageways of said first and second alignment guides.

9. The method of claim 1 wherein said stator defines a plurality of openings extending therethrough and said steps securing said aligned first and second bearing support members includes inserting a fastener through each of said plurality of stator openings and wherein each of said fasteners engages each of said first and second bearing support members.

10. The method of claim 9 wherein said first and second alignment guides define passageways extending therethrough and the steps of aligning said first and second bearing support members with said stator includes registering said first and second alignment guides with said stator openings.

11. A method of assembling a compressor assembly, said method comprising:  
providing a motor having a stator and a rotor;  
operably coupling a shaft to said rotor, said shaft defining a motor axis;  
securing a first bearing support member to said stator in a predefined position, said first bearing support member providing rotational support for said shaft proximate a first end of said motor, said first bearing support member having a first radially outwardly disposed

engagement surface;

securing a second bearing support member to said stator in a predefined position, said second bearing support member providing rotational support for said shaft proximate a second end of said motor opposite said first end, said second bearing support member having a second radially outwardly disposed engagement surface;

operably coupling a compressor mechanism to said shaft;

securing said operably engaged compressor mechanism relative to said motor, said shaft and said first and second bearing support members wherein said motor, said shaft, said first and second bearing support members and said compressor mechanism form a compressor subassembly;

inserting said compressor subassembly in a thermally expanded housing; and

securing said compressor subassembly within said housing by allowing said housing to contract and securely engage said first and second engagement surfaces.

12. The method of claim 11 wherein said first and second engagement surfaces are each disposed radially outwardly by a greater distance than a radially outermost portion of said motor and wherein securing said compressor subassembly within said housing includes securing said first and second bearing support members and said motor within a substantially cylindrically shaped portion of said housing.

13. The method of claim 11 wherein said step of securing said first bearing support member to said stator includes aligning said first bearing support member with said stator in said predefined position by registering at least one first alignment guide with at least one of said first bearing support member and said stator and wherein said step of securing said second bearing support member to said stator includes aligning said second bearing support member with said stator in said predefined position by registering at least one second alignment guide with at least one of said second bearing support member and said stator.

14. The method of claim 13 wherein each of said first and second alignment guides comprise substantially cylindrical-shaped members and wherein said steps of aligning said first and second bearing support members with said stator includes registering each of said first alignment guides with an opening located on said stator and an opening located on said first bearing support member and registering each of said second alignment guides with an opening located on said stator and an opening located on said second bearing support member.

15. The method of claim 14 wherein each of said first and second alignment guides define passageways extending through said cylindrical-shaped members and said steps of securing said aligned first and second bearing supports with said stator includes inserting a fastener through each of said passageways defined by said first and second alignment guides.

16. A method of assembling a hermetic compressor assembly, comprising:  
forming a first pair of pilot openings in a first pair of mating surfaces of a crankcase and a motor stator;

forming a second pair of pilot openings in a first pair of mating surfaces of the stator and a bearing support member;

inserting a first alignment guide into a first pilot opening of the first pair of pilot openings;

moving the crankcase and the stator into proximity with each other and seating the first alignment guide into a second pilot opening of the first pair of pilot openings to align the crankcase and the stator;

inserting a second alignment guide into a first pilot opening of the second pair of pilot openings;

moving the stator and the bearing support member into proximity with each other and seating the second alignment guide into a second pilot opening of the second pair of pilot openings to align the stator and the bearing support member; and

securing the stator to the crankcase and the bearing support member to the stator to form a subassembly wherein the crankcase, stator and bearing support member are maintained in alignment with each other.

17. The method of claim 16, further comprising:  
inserting the subassembly into a housing; and  
bringing interior surfaces of the housing into secure engagement with surfaces disposed on the crankcase and the bearing support member to fix the subassembly within the housing.

18. A compressor assembly comprising:  
a compression mechanism including a crankcase member having a main bearing and a plurality of first pilot openings;  
an electric motor comprising a stator and a rotor disposed within said stator, said stator secured to said crankcase member and having a plurality of second pilot openings and a

plurality of third pilot openings, each of said plurality of first pilot openings being aligned with one of said second pilot openings to form a plurality of pairs of aligned first and second pilot openings;

a shaft fixed to said rotor, said shaft rotatably supported by said main bearing, said compression mechanism operably coupled to said shaft;

a first alignment guide disposed within each said pair of aligned first and second pilot openings, whereby the alignment of said compression mechanism and stator is maintained;

an outboard bearing support member secured to said stator and having a plurality of fourth pilot openings, said motor disposed between said compression mechanism and said outboard bearing support member, said shaft rotatably supported by said outboard bearing support member, each of said plurality of third pilot openings being aligned with one of said fourth pilot openings to form a plurality of pairs of aligned third and fourth pilot openings; and

a second alignment guide disposed within each said pair of aligned third and fourth pilot openings, whereby the alignment of said compression mechanism, said stator and said outboard bearing support member is maintained.

19. The compressor assembly of claim 18, further comprising a housing, said compression mechanism, said motor and said outboard bearing support member disposed within said housing, and wherein said compression mechanism and said outboard bearing support members include outward facing surfaces securely engaging interior surfaces of said housing.